

STATEMENT OF WORK
Comprehensive Nutrient Management Plan
Tennessee

These deliverables apply to this individual plan. For other planned practice deliverables refer to those specific Statements of Work.

PLANNING

NOTE: A Comprehensive Nutrient Management Plan (CNMP) should address all land units that the animal feeding operation (AFO) owner and/or operator owns or has decision-making authority over and on which manure and organic by-products will be generated, handled, stored, or applied.

NOTE: NRCS policy requires that technical assistance provided for conservation planning follow the guidance and processes in the NRCS National Planning Procedures Handbook (NPPH). For the purposes of providing conservation planning technical assistance, Technical Service Providers are to complete the actions required in the first seven Steps of the NPPH planning process. All deliverables below are based on that requirement. For detailed guidance, planners should refer to the appropriate section of the NRCS NPPH (CNMP Technical Guidance) http://policy.nrcs.usda.gov/scripts/lpsiis.dll/H/H_180_600_E_5.htm.

DELIVERABLES

A completed, certified CNMP in accordance with Tennessee NRCS General Manual Title 180, Part 409 Conservation Planning Policy shall be developed and include the following:

1. Document the AFO owner's/operator's consideration of the six CNMP elements. Preliminary information will be collected utilizing TN-CPA-CNMP and/or TN-ENG-313A for poultry. It is recognized that a CNMP may not contain all six elements; however, they need to be considered by the AFO owner/operator during development of the CNMP, and the owner's and/or operator's decisions regarding each must be documented. These elements are as follows:
 - a. Manure and Wastewater Handling and Storage
 - b. Land Treatment Practices
 - c. Nutrient Management
 - d. Record Keeping
 - e. Feed Management
 - f. Other Utilization Activities

NOTE: The degree to which each CNMP element is addressed is determined by the General Criteria and must meet the specific criteria provided for each element in the National Planning Procedures Handbook (NPPH), Sections 600.53 and 600.54 available at http://policy.nrcs.usda.gov/scripts/lpsiis.dll/H/H_180_600_E_5.htm .

2. CNMPs will contain actions that address water quality criteria for the feedlot, production area, and land on which the manure and organic by-products will be applied (i.e., as a minimum the plan would address CNMP elements a, b, c, and d listed in item 1 above). This includes addressing soil erosion to reduce the transport of nutrients within or off of a field to which manure is applied. For AFO owners and/or operators who do not land apply any manure or organic by-products, the CNMP would address only the feedlot and production areas (i.e., address CNMP elements a, d, and f listed in item 1 above).
3. Document that the CNMP meets all applicable local, Tribal, State, and Federal laws and regulations. When applicable, ensure that USEPA-NPDES or State permit requirements (i.e., minimum standards and special conditions) are addressed. *The Tennessee Department of Environment and Conservation Water Quality Control Board Division of Water Pollution Control requires that permitted CAFOs meet the requirements of Chapter 1200-4-5 Permits, Effluent Limitations and Standards. This rule is available at <http://www.state.tn.us/environment/wpc/publications/>.*

STATEMENT OF WORK
Comprehensive Nutrient Management Plan
Tennessee

4. *Format and Content of CNMP – AFOPro will be used to develop manure and commercial fertilizer allocation decisions in compliance with the NRCS's 590 Standard, which requires the documentation of form, source, timing, method, and placement of nutrients. AFOPro is a standalone nutrient management planning tool, with optional connections to GIS (ArcView using either AFOPro Spatial or Spatial Nutrient Management Planner as the front end) and the NRCS's Animal Waste Management (v 2.1 or higher) engineering software. Once the required information is entered in AFOPro, the application automates and populates the Tennessee NRCS CNMP approved template. Additionally, AFOPro automates the Phosphorus Index and contains state-specific fertility recommendations.*
<http://www.wcc.nrcs.usda.gov/awm/>. ArcView GIS will be used to develop maps in the CNMP.
5. Certify that the CNMP meets requirements of the NRCS Field Office Technical Guide (FOTG) conservation practice standards for all practices contained within it.
6. Provide documentation in the CNMP that addresses the following items:
 - a. Site information
 - i. Names, phone numbers, and addresses of the AFO owner(s) and operator(s).
 - ii. Location of production site: legal description, driving instructions from nearest post office, and the emergency 911 coordinates.
 - iii. Farmstead sketch.
 - iv. Plat map or local proximity map.
 - v. Emergency action plan covering: fire, personal injury, manure storage and handling, and land application operations.
 - vi. Operation procedures specific to the production site and practices.
 - vii. Existing documentation of present facility components that would aid in evaluating existing conditions, capacities, etc. (i.e., as-built plans, year installed, number of animals a component was originally designed for, etc.).
 - viii. Facility Sketch – A sketch shall be created adequate to describe existing and planned conditions at the site with the following elements included:
 - Existing structures, vegetation boundaries and utilities
 - Wells, waterways and roadways
 - North Arrow and Drawing Scale (shown as bar scale)
 - Title block with name of project, designer's and preparer's names.
 - b. Production information
 - i. Animal types, phases of production, and length of confinement for each type at this site.
 - ii. Animal count and average weight for each phase of production on this site.
 - iii. Calculated manure and wastewater volumes for this site.
 - iv. Manure storage type, volume, and approximate length of storage.
 - v. Annual nutrient production on the farm of Nitrogen, Phosphorus, and Potassium
 - c. List all required and/or facilitating practices
7. Provide documentation of compliance with all applicable permits or certifications
 - a. Federal, Tribal, State or local permits and/or ordinances.
 - b. Operator or manager certifications.
 - c. Manure applicator certifications.
 - d. Record of inspections or site assessments.
 - e. Documentation of schedule for conservation systems and practices.
 - f. Documentation that required software packages have been used or will be used.
8. Provide documentation for element **Manure and Wastewater Handling and Storage** and assurance that deliverables in statements of work (SOW) for applicable NRCS Conservation Practice Standards

STATEMENT OF WORK
Comprehensive Nutrient Management Plan
Tennessee

(CPS) are met. Use of NRCS's AWM computer program as described at <http://www.wcc.nrcs.usda.gov/awm/awm.html> will be used in completion of this section.

- a. Narrative describing current and planned processes for collection, storage, treatment and transfer of manure and waster water. If milk house waste is stored, transferred or treated separately, identify this process and all components such as settling trap, grease trap, pump station and storage or treatment type, as applicable.
 - b. Narrative describing current and planned processes for disposing of dead animals, animal medical wastes, spoiled feed, and any other potential contaminants to insure compliance with federal, state and local laws and regulations.
 - c. Documentation of types of animals and production phases (broilers, layers, etc.) and numbers of each type. Also document average weights of each animal type and the period of confinement for each type of animal.
 - d. Document total estimated manure and waste water volumes produced at the facility. For a new facility estimate these volumes using procedures and tabular data provided in the NRCS Agricultural Waste Management Field Handbook (AWMFH), Chapter 4, "Waste Characteristics".
 - e. Identify manure storage type, volume, and length of storage. If more than one storage is planned, give this information for each storage. (i.e. Manure storage, solids settling tank, filter strip, flush tank, etc.).
 - f. Identify existing transfer equipment, system and procedures, as well as those that are planned, if different from existing scenario.
 - g. Include a copy of the Operation and Maintenance (O&M) plan for all facilities and maintenance activities that address collection, storage, treatment and transfer of manure and waste water, including associated equipment, facilities and structures.
 - h. Document nutrient content and volume of any and all manure that will be transferred to others off of the farm.
 - i. Include an emergency response plan to address any potential spills and catastrophic events.
 - j. A Quality Assurance Plan that documents inspection and certification of the practices within this element.
 - k. Include any additional considerations addressing air quality issues or concerns.
 - l. Include any additional considerations addressing pathogen issues or concerns.
9. Provide documentation for element **Nutrient Management** and assurance that deliverables in statements of work (SOW) for NRCS CPS Nutrient Management (Code 590) are met. NRCS approved software for the Nutrient Management section of the CNMP shall be the latest version of AFOProTM.
- a. Producer name, address, county, phone number, email. Planner's name, address, phone number, email. Date plan prepared and crop year of plan.
 - b. Narrative describing the farm enterprise: farm manager, type of operation, animal units (types, number, and weight of each animal and period of confinement), acreage (rented and owned), business objectives/plan, watershed, watershed code, and watershed concerns.
 - c. Local proximity map such as a highway map showing farmstead, tracts and watercourses.
 - d. Aerial site photographs or maps with boundaries of fields and marked setbacks and buffers.
 - e. Soil map w/ soil descriptions and non-technical descriptions.
 - f. Maps should have appropriate map symbols and legends including a title block with:
 - i. Landowner/operator
 - ii. Prepared with assistance from _____
 - iii. Scale of the map
 - iv. Date prepared
 - v. North Arrow
 - vi. Name of the County
 - vii. District and State
- g. The following have been identified for all crop fields:

STATEMENT OF WORK
Comprehensive Nutrient Management Plan
Tennessee

- i. Primary soil type
 - ii. Crop rotations and year in rotation (e.g. C2 or C3H5)
 - iii. Type, timing, depth, and sequence of tillage
 - iv. Description of crop residue use
 - v. Topographic map with appropriate legend.
 - vi. Location of designated environmentally sensitive areas or resources, such as sinkholes, streams, springs, lakes, ponds, wells, gullies, tile inlets areas of concentrated flow and drinking water sources.
 - vii. Landowner/operator field identification codes and whether land is owned or rented.
 - viii. Landuse designation (hayland, cropland, pasture, etc.)
 - ix. Current and/or planned plant production sequence or crop rotation.
 - h. All fields have recent soil tests (within 1 yr.) taken in accordance with NRCS CPS 590. The test methods and interpretations of such tests are within the currently accepted guidelines of The University of Tennessee.
 - i. Annual manure test results from each storage facility.
 - j. Estimation of manure production including bedding, milk center, and barnyard runoff, if applicable.
 - k. All Manure/Waste application equipment has been described, sized and calibrated.
 - l. Manure/waste produced in relation to available or spreadable acres has been assessed.
 - m. Manure storage type, volume, and length of storage.
 - n. A complete nutrient budget for nitrogen, phosphorus, and potassium for the plant production system that includes all potential sources of nutrients.
 - o. Realistic yield goals and a description of how they were determined.
 - p. Recommended nutrient application rates by field including the form, source, amount, timing (month and year) and method of application of nutrients (manure and commercial fertilizer).
 - q. Manure/Waste spreading schedule has been developed.
 - r. If excess nutrients exist, decisions have been made, or alternatives presented for off-farm use of the manure and appropriate documentation provided.
 - s. Risk assessments for potential phosphorous transport from fields are made and recommended BMPs to treat the concerns are indicated.
 - t. Environmental Effects of nutrient management (NRCS-CPA-25 or 52).
 - u. Plan has been checked for cross-compliance with all applicable Federal programs (Food Security Act-HEL and Wetland Conservation) and State regulations.
 - v. Crop types, realistic yield targets, and expected nutrient uptake amounts.
 - w. Application equipment descriptions and methods of application.
 - x. Expected application seasons and estimated days of application per season.
 - y. Estimated application amounts per acre (volume in gallons or tons per acre, and pounds of plant available nitrogen, phosphorous as P2O5, and potassium as K2O per acre).
 - z. Estimate of acres needed to apply manure generated on this site, respecting any guidelines published for nitrogen or phosphorous soil loading limits.
10. Provide documentation for element **Land Treatment** on acreage where manure is applied and assurance that deliverables in statements of work (SOW) for applicable NRCS CPS are met.
- a. Narrative describing on-site visit identifying potential natural resource concerns, problems, and opportunities for the conservation treatment unit. (Conservation Plan cover sheet will suffice if sufficient detail is included to meet this requirement.)
 - b. Identification of the potential for Nitrogen and Phosphorus losses from the site. (Tabular data of P Index data will satisfy this requirement.)
 - c. Documentation that NRCS Quality Criteria for Water Quality, found in Section III of the FOTG has been met.
 - d. Documentation that soil erosion has been addressed to reduce the transport of manure nutrients within or off of a field to which manure is applied. (If planned to "T", RUSLE

STATEMENT OF WORK
Comprehensive Nutrient Management Plan
Tennessee

- documentation will meet this requirement. Otherwise, a narrative explaining how the reduction will occur.)
- e. Identify NRCS Conservation Practice Standards, and code numbers that will be used as part of a conservation system to minimize runoff and soil erosion on fields where manure or other organic by-products are applied (Conservation Plan will meet this requirement). Practices are planned and applied in accordance with deliverables in the statements of work (SOW) located in Section IV of eFOTG.
 - f. Identify federal, state and local laws and regulations that are not being met and how compliance will be attained, as applicable. (This can be a narrative format or identified in the description of benchmark conditions or resource concerns assessment on the conservation plan cover sheet. Plan for compliance can be identified in the conservation plan.)
 - g. Identify the following on an aerial photo (Plan Map):
 - i. Land application areas.
 - ii. Individual fields with setbacks, buffers, waterways and other planned conservation practices.
 - iii. Sensitive areas such as sink holes, streams, springs, lakes, ponds, wells, gullies, and drinking water sources.
 - iv. Other site information features of significance such as property lines.
 - v. Include soils map and soils information such as features, limitations, and capability for each field.
 - vi. Identify operation and maintenance (O&M) practices and activities for all conservation practices.
11. Provide provisions in CNMP for actual activity records to be kept.
- a. Written manure application agreements. (Where Applicable)
 - b. Soil tests.
 - c. Manure test annually for each individual manure storage containment.
 - d. Planned and applied rates, methods of application, and timing (month and year) of nutrients applied. (Include all sources of nutrients, i.e., manure, commercial fertilizers, etc.)
 - e. Current and planned crop rotation.
 - f. Weather conditions during nutrient application. (Optional)
 - g. General soil moisture condition at time of application (i.e., saturated, wet, moist, dry). (Optional)
 - h. Actual crop and yield harvest from manure application sites.
 - i. Record of internal inspections for manure system components.
 - j. Record of any spill events.
12. Operation and Maintenance requirements
- a. Detailed operation and maintenance procedures for the conservation practices, i.e., waste storage facility, fence, diversion, heavy use area, use exclusion, irrigation system, nutrient management, etc., contained in the CNMP. This would include procedures as calibration of land application equipment, storage facility emptying schedule, soil and manure sampling techniques, etc.
13. Progress reporting and Payment - *The "Certification Agreement" signed by technical service providers in TechReg stipulates they have a responsibility to provide information to NRCS regarding their activities with USDA producers. All progress for technical services obtained from technical service providers must be reported in TechPRS before payment to TSP can be made. Progress to be reported in TechPRS is limited to planning activities and implementation of practices (design, installation, checkout) under any program when TSP monies fund that activity. This includes technical services obtained through program participant contracts, federal contracts, cooperative agreements, contribution agreements, and architectural and engineering contracts. All TSP progress will be*

STATEMENT OF WORK
Comprehensive Nutrient Management Plan
Tennessee

reported in TechPRS, which is accessible from the TechReg website at <http://techreg.usda.gov>. Click on "Progress Reporting System."

REFERENCES

- NRCS National Planning Procedures Handbook (CNMP Technical Guidance)
- NRCS Field Office Technical Guide (eFOTG)
- NRCS National Engineering Manual
- NRCS National Agronomy Manual
- NRCS Environmental Compliance Handbook
- NRCS Cultural Resources Handbook
- AFOPro™ Nutrient Management Software <http://www.wcc.nrcs.usda.gov/awm/>
- NRCS Agricultural Waste Management Field Handbook
- NRCS's Animal Waste Management (v 2.1 or higher) Engineering Software <http://www.wcc.nrcs.usda.gov/awm/>